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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,388	04/19/2001	Jae Yoon Lee	2658-0234P	7290

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EXAMINER

CLEVELAND, MICHAEL B

ART UNIT	PAPER NUMBER
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1762

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DATE MAILED: 07/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,388

Applicant(s)

JOGO, NAOZUMI

Examiner

Michael Cleveland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group II, claims 9-21 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that no serious burden exists in examining both sets of claims. This is not found persuasive because a serious burden exists in the differing issues likely to arise during the prosecution of the claims of differing statutory classes.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 5.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 9-12, 16-18, and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujita (U.S. Patent 6,582,504, hereafter '504).

'504 teaches a method of patterning an electroluminescent (EL) display (Abstract), comprising:

providing a molding plate (16) with projections and depressions (i.e., convex and concave portions, also referred to in Applicant's specification as lands (12) and grooves (14), respectively) on a molding roller (17) (col. 9, lines 1-37); and

letterpress printing the EL material onto a substrate (col. 5, lines 26-38, col. 8, lines 41-51, col. 10, lines 14-20). "Letterpress" is defined by Merriam-Webster's Collegiate Dictionary, 10 edn., as "the process of printing from an inked raised surface esp. when the paper is impressed directly on the surface" (in contrast to "intaglio": "printing (as in die stamping and gravure)

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done from a plate in which the image is sunk below the surface"). Therefore, letterpress printing the EL material must inherently entail applying the EL material to the raised surface (i.e., convex portion or land) of the molding plate and printing the EL material from the molding plate by rotating the roller so that each inked convex portion contacts the substrate (col. 9, lines 1-14; Figs. 11-12).

Claim 10: The applying and printing steps may be repeated to form red, blue, and green pixels (col. 12, lines 8-52).

Claim 11: The method comprising forming pixel electrodes (2) between barrier ribs (col. 12, lines 1-6; col. 7, lines 21-34); and

forming barrier ribs (5) between said pixel electrodes for preventing spreading and mixing of different colors of EL material (col. 7, line 50-col. 8, line 9), wherein the printing step deposit the EL material (3) on the pixel electrodes (2) (See col. 4, lines 6-33; Figs. 1 and 12).

Claims 12, 20, and 21: The barrier ribs may form boundaries between pixels (col. 8, lines 1-8; Fig. 5). The barrier ribs may be stripe-shaped (Fig. 7(b)) or lattice-shaped (Fig. 7(a)).

Claim 16: The barrier ribs may be made of polyimide (col. 12, lines 1-6).

Claim 17: The EL material may be a polymer (col. 5, lines 26-28) solution (col. 5, lines 51-56. See Example 1, col. 10, lines 14-16).

Claim 18: The ink may be supplied to the convex portions of the letterpress roller by rotating it and a supply roller (20) (Fig. 12, col. 9, lines 1-15).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita '504 in view of Himeshima et al. (U.S. Patent 6,592,933, hereafter '933).

'504 teaches the features of claim 11, as discussed above. It does not explicitly teach a) that an upper portion of a barrier rib (5) overlaps an edge of a pixel electrode, b) that the height of the barrier ribs is larger than the combined thickness of the adjacent EL material and the pixel electrode, or c) that the barrier rib is silica or silicon nitride.

'933 teaches alternate arrangements for spacers and EL layers of EL devices.

Claim 13: '933 teaches the use of barrier ribs comprising first spacers (3) and second spacers (4) (col. 9, lines 1-20). '933 teaches that an upper portion of the barrier ribs (3) may overlap the edge of pixel electrodes (2) (See Fig. 14) to form an inter-layer insulation layer (col. 9, lines 13-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used overlapped the pixel electrodes of '504 with an upper portion of its barrier ribs 5 because '933 indicated that such a configuration would have advantageously provided an inter-layer insulation layer.

Claim 14: '933 teaches that the pixel electrode (2) thickness is 100-300 nm (col. 6, lines 1-4), that the thickness of the hole transport layer (5), emitting layer (6), and electron-transport layer (7) are each 10-1000 nm (col. 8, lines 4-12), and that the height of the barrier ribs (4) is greater than that of the organic thin film (10, made of films 5, 6, and 7; See Fig. 14) and preferably 0.5-100 microns (500-100000 nm) (col. 8, line 57-col. 9, line 20). Example 1 particularly demonstrates barrier ribs 4 microns (4000 nm) in height (col. 16, lines 9-16), significantly greater than the total of the pixel electrode thickness (150 nm, col. 15, lines 56-60) and the electroluminescent layer thickness (30 nm, col. 5, lines 35-55). The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07. Therefore, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made, in the invention of '504 to have used barrier ribs (5) with a height greater than the total thicknesses of electrode (2) and electroluminescent layer (3) because '933 teaches that such configurations are operative configurations and provide good isolation between pixels of EL devices.

Claim 15: '504 is open to a variety of barrier materials (col. 8, lines 10-14), but does not explicitly teach the use of silicon dioxide. '933 teaches a list of known materials for spacers in EL devices. The spacers include glass (SiO₂) (col. 9, lines 21-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used glass as the particular spacer material of '504 because '504 is open to any operative spacer material and '933 teaches that glass is an operative spacer material for EL devices.

8. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita '504 in view of Mourrellone (U.S. Patent 4,542,693, hereafter '693).

'504 teaches the features of claim 18, as discussed above. It does not explicitly teach causing the EL material to have a uniform thickness on the supply roller.

'693 teaches for a device comprising letterpress (col. 1, lines 1-16) ink cylinder (T) and supply roller (A) that the provision of an equalizing roller (9) that provides an ink layer of uniform thickness on supply roller (A) (claim 8) advantageously improves the regularity of ink application and avoids the formation of undesired stripes (col. 7, lines 10-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have caused the EL ink of '504 to have had a uniform thickness on the supply roller by using the equalizing roller of '693 because '693 teaches that such an equalizing roller would have improved the regularity of the ink application and avoided the formation of undesired stripes.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (703) 308-2331. The examiner can normally be reached on 8-5:30 M-F, with alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 306-3186 for regular communications and (703) 306-3186 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read "Michael Cleveland".

Michael Cleveland

Patent Examiner

July 20, 2003